JOURNAL OF ELECTROANALYTICAL CHEMISTRY

Vol. 375 Nos. 1 and 2 CONTENTS SEPTEMBER 19 1994

Reviews

The electrochemistry of L-cystine and L-cysteine. Part 1: Thermodynamic and kinetic studies
T.R. Ralph (Reading, UK), M.L. Hitchman (Glasgow, UK), J.P. Millington (Capenhurst, UK) and F.C. Walsh (Portsmouth, UK) 1

The electrochemistry of L-cystine and L-cysteine. Part 2: Electrosynthesis of L-cysteine at solid electrodes
T.R. Ralph (Reading, UK), M.L. Hitchman (Glasgow, UK), J.P. Millington (Chester, UK) and F.C. Walsh (Portsmouth, UK) 17

Regular Papers

Reorganization of the medium and local vibrations in electrode reactions of electron–proton transfer
V.A. Benderskii and S.Yu. Grebenshchikov (Moscow, Russian Federation) 29

A new approach to measurement modelling in electrochemical impedance spectroscopy
P. Zoltowski (Warsaw, Poland) 45

Nucleation and growth on finite electrode geometries — a generalized approach based on Robbins' theorem
C. Saravanan, P. Sunthar and E. Bosco (Karaikudi, India) 59

Underpotential deposition of Cu on Au(111): implications of the HB model
L. Blum (Rio Piedras, PR, USA) and D.A. Huckaby (Fort Worth, TX, USA) 69

Theory of EC_1, EC_2, EC_1E, EEC_1 and irreversible surface reactions in polarography
E. Laviron and R. Meunier-Prest (Dijon, France) 79

Digital simulations with the fast implicit finite-difference (FIFD) algorithm. Part 4. Simulation of electrical migration and diffuse double-layer effects
M. Rudolph (Jena, Germany) 89

Bipolar membranes under forward and reverse bias conditions. Theory vs. experiment
P. Ramírez, H.-J. Rapp (Stuttgart, Germany), S. Mafé (Burjassot, Spain) and B. Bauer (Stuttgart, Germany) 101

A combined voltammetry and electrochemical quartz crystal microgravimetry study of the reduction of aqueous Se(IV) at gold
C. Wei, N. Myung and K. Rajeshwar (Arlington, TX, USA) 109

Dipole effect of (100) monatomic steps of gold $n(111) \times (100)$ vicinal faces in contact with aqueous solutions and under ultrahigh vacuum
J. Lecoeur, J.P. Bellier and C. Koehler (Meudon, France) 117

Amperometric enzyme electrode for Ca^{2+}
E. Magner and W.J. Albery (London, UK) 123

Consistency of voltammetric metal speciation in latex particle dispersions
J.M. Día-Cruz, J.H.A.M. Wonders, H.G. De Jong and H.P. Van Leeuwen (Wageningen, Netherlands) 127

Dynamics of surface alloying promoted by cadmium underpotential deposition–anodic stripping cycles on irregular silver electrodeposits
M.E. Martins, A. Hernández-Creus, R.C. Salvarezza and A.J. Arvia (La Plata, Argentina) 141

Changes in the kinetics of the oxygen evolution reaction induced by oxide films at platinum electrodes
A.E. Bolzán and A.J. Arvia (La Plata, Argentina) 157

Determination of the structure of electropolymerized indole-5-carboxylic acid
J.G. Mackintosh, C.R. Redpath, A.C. Jones, P.R.R. Langridge-Smith, D. Reed and A.R. Mount (Edinburgh, UK) 163

Straight lines, windows and background current synthesis in deconvolution procedure
I. Pižeta, B. Jeren and K. Aleksić-Maslać (Zagreb, Croatia) 169

Participation of dinuclear metal complexes in charge transfer at electrodes: The Cu(II)/Cu(Hg) electrode reaction in acetate solutions
S. Fronaeus (Lund, Sweden) 175

Highly sensitive and selective determination of riboflavin by flow injection analysis using parallel dual-cylinder microelectrodes
W. Peng, H. Li and E. Wang (Changchun, People's Republic of China) 185

The potential distribution across the semiconductor|electrolyte interface: a study by electrolyte electroreflectance spectroscopy of GaAs and $Ga_{1-x}Al_xAs$ under conditions of photodissolution
R.S. Hutton, L.M. Peter (Southampton, UK), R.A. Batchelor and A. Hamnett (Newcastle upon Tyne, UK) 193

Influence of the forming electrolyte on the electrical properties of anodic zirconium oxide films. Part II. Ac impedance investigation
E.M. Patrito and V.A. Macagno (Córdoba, Argentina) 203

A further microelectrode study of the influence of electrolyte concentration on the kinetics of redox couples
C. Beriet and D. Pletcher (Southampton, UK) 213

Effect of pH on the oxidation pathway of dopamine and dopa
J. Li and B.M. Christensen (Madison, WI, USA) 219

Electrochemically controlled release of chemicals from redox-active polymer films
S. Cosnier, C. Innocent, J.-C. Moutet and F. Tennah (Grenoble, France) 233

A chemical redox reaction following the reduction of a modified electrode
S. Kanda, H. Mizobuchi and R. Sioda (Tokushima, Japan) 243

The photoelectrochemical reduction of *p*-bromo-nitrobenzene: an ECEE, ECE or DISP process? Mechanistic resolution via channel electrode voltammetry
R.G. Compton and R.A.W. Dryfe (Oxford, UK) 247

H/D substitution effect on formaldehyde oxidation rate at a copper anode in alkaline medium studied by differential electrochemical mass spectrometry
Z. Jusys (Vilnius, Lithuania) 257

The reduction mechanism of aromatic nitro compounds in aqueous medium. Part IV. The reduction of *p*-nitrobenzophenone between $H_0 = -5$ and pH 14
E. Laviron, R. Meunier-Prest and R. Lacasse (Dijon, France) 263

Reversible charge transfer with unknown mass transfer. Characterization and modelling by using a mass-transfer operator determined from experimental data
F. Miomandre and E. Vieil (Grenoble, France) 275

A study of copper electrode behavior in alkaline solutions containing benzotriazole-type inhibitors by the photocurrent response method and intensity modulated photocurrent spectroscopy
A.D. Modestov, G.-D. Zhou, H.-H. Ge (Shanghai, People's Republic of China) and B.H. Loo (Huntsville, AL, USA and Kent Ridge, Singapore) 293

Redox characteristics of some substituted formazans in aqueous media
G.M. Abou-Elenien (Giza, Egypt) 301

Reverse pulse polarography of labile metal + macromolecule systems with induced reactant adsorption: theoretical analysis and determination of complexation and adsorption parameters
J. Galceran, D. Reñe, J. Salvador, J. Puy (Lleida, Spain), M. Esteban and F. Mas (Barcelona, Spain) 307

Simple models for adsorption on electrodes. I. Adsorption of monomeric neutral organic molecules
P. Nikitas (Thessaloniki, Greece) 319

Simple models for adsorption on electrodes. II. Aggregation processes and phase transitions
P. Nikitas and S. Andoniou (Thessaloniki, Greece) 339

The adsorption of sulfate on gold(111) in acidic aqueous media: adlayer structural inferences from infrared spectroscopy and scanning tunneling microscopy
G.J. Edens, X. Gao and M.J. Weaver (West Lafayette, IN, USA) 357

Short communications

Self-assembled monolayers of 3-(ω-mercaptoalkyl)pyrroles on gold
D.M. Collard and C.N. Sayre (Atlanta, GA, USA) 367

Ac polarography and ac voltammetry of cystine
S. Vavřička and M. Heyrovský (Prague, Czech Republic) 371

Effect of non-uniform active site distributions on electrocrystallization transients
C. Saravanan, P. Sunthar and E. Bosco (Karaikudi, India) 375

Electrochemical reduction of carbon dioxide at elevated pressure on semiconductor electrodes in aqueous solution
M. Halmann and B. Aurian-Blajeni (Rehovot, Israel) 379

Micrometer size dependence of mass transfer rate across a single droplet|water interface by a laser trapping–electrochemistry technique
K. Nakatani, T. Uchida, N. Kitamura and H. Masuhara (Kyoto, Japan) 383

Galvanostatic potential oscillations during the electrodeposition of rhenium
I. Bakos and G. Horányi (Budapest, Hungary) 387

Preliminary notes

Adsorption of methanol, 1-propanol and 1-octanol on a mercury electrode and adsorption of 1-octanol on the adsorbed layer of methanol at a mercury electrode
H. Sawamoto (Kochi, Japan) 391

A voltammetric study of a surface phase transformation of adsorbed HPO_4^{2-} anion on Au(111) in the presence of Na^+ cations
F. Silva, M.J. Sottomayor and A. Martins (Porto, Portugal) 395

Kinetic aspects of oxidation of isopropanol on Pt electrodes investigated by in situ time-resolved FTIR spectroscopy
S.-G. Sun and Y. Lin (Xiamen, China) 401

A novel enzyme electrode for the water-free organic phase
S. Dong and Y. Guo (Changchun, China) 405

Simultaneous detection of structural change and mass transport accompanying the redox of a ferrocenylundecanethiol monolayer with the novel FT-IR reflection absorption spectroscopy/electrochemical quartz crystal microbalance combined system
K. Shimazu, S. Ye, Y. Sato and K. Uosaki (Sapporo, Japan) 409

An effect of proton conductivity in electrolyte membranes on cathode performances at polymer electrolyte fuel cells
M. Watanabe (Kofu, Japan), K. Sakairi and M. Inoue (Hiratsuka, Japan) 415